

and space instrumentation projects. Currently he is teaching a course on product development of electronic devices to electronics engineers. (Declaration, Section 2).

The theory upon which the subject invention is based relies upon secondary features in the output signals of commercially available heart rate monitors such as the Polar heart rate monitor described in the specification of the subject application. These monitors all include electronic signal shaping stages such as those depicted in Figures 3 and 4 of the application to facilitate their primary function of heart rate monitoring. Accordingly, it is unnecessary to add any additional structure to the heart rate monitor in order to recognize different signal strengths. (Declaration, Section 5).

Given that information regarding signal strength is inherently present as a secondary feature of the digital output signals of commercially available heart rate monitors, it would be obvious to one of ordinary skill to produce the invention claimed. The implementation of the invention would require only "basic level skills" in digital electronics. (Declaration, Section 7).

Accordingly, in view of the Koivula declaration Applicant contends that the specification reasonably conveys to one skilled in the art that the Applicant had possession of the claimed invention at the time the application was filed and that, in view of the specification, one skilled in the art would be able to produce the invention as claimed.

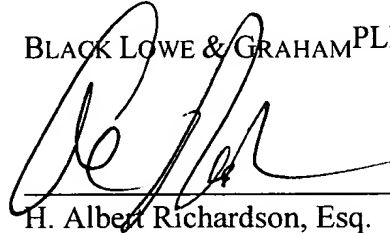
In summary, the Applicant believes that none of the references cited by the Examiner, either singularly or in combination, disclose or suggest the invention now claimed and that the invention is patentable over all prior art cited by the Examiner or known to the Applicant. Accordingly, the Applicant requests that the Examiner re-examine this application in view of this response, withdraw all rejections of record, and allow each of the claims now proposed.

In the event additional fees are due as a result of this response, payment for those fees has been enclosed in the form of a check. Should further payment be required to cover such fees you are hereby authorized to charge such payment to Deposit Account No. 501050.

DATED this 29th day of June, 2006.

Respectfully submitted,

BLACK LOWE & GRAHAM^{PLLC}



H. Albert Richardson, Esq.
Registration No. 27,701

HAR/elb


Enclosures: Request for Continued Examination
Eero Koivula Declaration dated June 22, 2006

25315

CUSTOMER NUMBER

3
TU2X-1-1004 AM4

BLACK LOWE & GRAHAM^{PLLC}

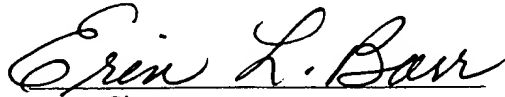


701 Fifth Avenue, Suite 4800
Seattle, Washington 98104
206.381.3300 • F: 206.381.3301

CERTIFICATE OF MAILING

I hereby certify that this correspondence (together with all attachments and enclosures) is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to, Mail Stop RCE, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Dated: June 29, 2006


Signature

Erin L. Barr

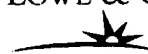
Printed or Typed Name

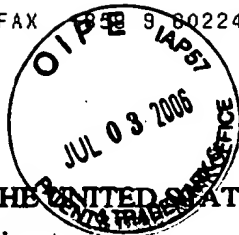
25315

CUSTOMER NUMBER

4
TU2X-I-1004 AM4

BLACK LOWE & GRAHAM ^{PLLC}


701 Fifth Avenue, Suite 4800
Seattle, Washington 98104
206.381.3300 • F: 206.381.3301



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Simo Mäenpää
Title: TREADMILL ARRANGEMENT
Serial Number: 09/894,803
Filing Date: June 29, 2001
Examiner / Unit: Stephen Crow / 3764
Attorney Docket Number: TU2X-1-1004

1. Upon request, I hereby make the following statement regarding the ability of a person with ordinary skills in electronics to make use of the invention titled "TREADMILL ARRANGEMENT".
2. As to my personal background, I received the degree of Licentiate of Philosophy in physics at the University of Turku in 1986. In Swedish and Finnish universities, Licentiate's degree equals completion of the coursework required for a doctorate and a dissertation roughly equivalent to one half of a doctoral dissertation.
At the time of writing, I have been working in the field of product development, including electronics design, in several commercial, industrial, medical and space instrumentation projects for 20 years.
For a full academic year, I have been teaching a course on the product development of electronic devices at the Turku University of Applied Sciences, to students qualifying as engineers in the field of electronics.
3. The invention utilizes the signal from a heart rate monitoring apparatus in order of deducing the position of the user on the treadmill, and subsequently, adjusting the operating parameters of the treadmill to appropriate levels.
4. The physical basis of the measuring method has been stated in the chapter [0010] of the Patent Application.
"On the basis of the strength of the received signal, i.e. in practice on the basis of the field intensity, it is possible to define the distance between the transmitter and the receiver in a known manner."
The dependence of the field strength on the distance from the transmitter is well known, e.g. Alonso, M. and Flinn, E., *Fundamental University Physics*, Addison-Wesley Publishing Company, Reading Massachusetts, Volume II (Fifth printing 1973), Chapter 15.7.
5. The implementation relies on secondary features present in the output signals of commercially available heart rate monitors. Figures 3 and 4 in the Patent Application depict electronic signal shaping stages, such as (low pass) filters. These stages are included in commercially available receivers, to better serve their primary purpose of heart rate monitoring. The signal shaping is obvious in the oscilloscope graphs presented in P. Mattila's Master's Thesis (chapters 2.2.2, 2.2.3 and 3.2), in which the Polar heart rate monitor was studied. Also, it is obvious that the output pulse width is related to the received signal strength.
6. The width of the digital output signal does, indeed, carry information about the strength of the received signal, and thus about the distance between the transmitter and the receiver, and allows one to deduce the position of the user on the treadmill.
The Patent Application mentions, in addition to Polar, also the brand names Sigma Sport and Cardiosport, which presumably operate in the same fashion.

Mattila discusses in his Master's Thesis also other approaches, utilizing the analogue signal, available in a test point of the Polar receiver, instead of the digital output signal.

7. The principle of the implementation of this invention is obvious, once one understands that the desired information is present as a secondary feature in the digital output signals of commercially available heart rate monitors. The implementation of pulse width measurement of a digital signal requires only basic level skills in digital electronics.
8. Being warned that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of title 18 of the United States Code and that such willful false statements may jeopardize the validity of the subject application or document or any registration resulting therefrom, I declare that I am aware of the U.S. Patent Practice as regards willful false statements and the like and declare further that all statements made here are believed to be true.

Dated June 22, 2006



Eero Koivula, Phil.Lic.